

10/731,057

energy to the batteries 6 which comprise both the high and low voltage systems of Armano et al. '608.

Understanding at a minimum that the batteries of the above noted voltage systems are in series, the Applicant has made a thorough review of Armano et al. '608 and cannot find at least the Applicant's claimed structural feature of a "a voltage converter connected from the primary energy storage and to the secondary energy storage for receiving electrical energy from the primary energy storage and providing electrical energy to the secondary energy storage. . .". The Applicant points out that while in Armano et al. '608 there are two voltage converters 4, 5, these voltage converters are specifically disclosed as positioned between the alternator 2 and the battery 6 and each converter 4, 5 is dedicated to the circuit for either the high voltage or the low voltage system. As Armano et al. '608 either alone or in combination with any reference does not disclose, teach or suggest such a feature, the Applicant believes claim 25 to be allowable.

Furthermore, the circuit as disclosed in Armano et al. '608 cannot distinguish any feedback from the high voltage system from that system. In other words, if the high voltage 42V system were to be discharged to the extent that it fell below the of the 14V voltage system, because of the circuit design and that the batteries 6 are in a series as shown in Fig. 1, the high voltage system would draw down the 14V system. This is particularly different from the present invention which overcomes this drawback, and specifically recites that, "the second voltage level will not fall below the first voltage level during the period of time, thereby preventing a feedback from the secondary energy storage to the first energy storage."

The Examiner has indicated that the above noted feature of the present invention is a functional "whereby" clause and is not given patentable weight because it does not define any structure and therefor cannot serve to distinguish. However, where the first and second voltage levels in the Applicant's circuit are a specifically claimed feature, and directly interrelated with the physical circuit itself, the Applicant takes issue that this clause is merely functional. That the second voltage will not fall below the first voltage level is in fact a structural feature inherent in the Applicant's circuit design as recited in the claims such that this feature should be given patentable weight.

In any event, the Applicant has added a further claim 38 similar to that of claim 25, but including the further recitation of "a secondary energy storage *receiving electrical energy solely from the primary energy storage* for providing electrical energy

12/21/05 4:16 PM

- 6 -

10/731,057

at a second voltage level to the second energy consumer...". This recitation is believed to clearly recite that the secondary energy storage, i.e., the capacitor, receives its electrical energy not from the generator or the alternator as in Amano et al. '608, but only from the primary energy storage 1 as seen in Applicant's Fig. 1.

By way of further explanation, in the Applicant's presently claimed invention the second energy storage i.e. the capacitor 4, is loaded directly from the first energy storage. This means that the generator 10 has only to supply a low-voltage power to load the first energy storage. Therefore, the generator can be designed for a low voltage power supply and will be much smaller and cheaper than Amano's generator which must be able to load the full 48V system battery. Furthermore, as explained above in regards to claim 25, the Applicant's electric circuit with the first energy storage is separated from the circuit with the second energy storage by a voltage converter of a high-setting adjuster type and because of this there is no feedback from the second energy storage to the first energy storage which would adversely impact the output of the first energy storage.

The Applicant notes that the official action contains no discussion with respect to the Carlson et al. '820 reference, nor any with regards to the alleged combination of Carlson with Amano et al. '608. However, in order to fully responsive to the Official Action the Applicant provides these further remarks regarding the disclosure of Carlson et al. '820. Although it shows a capacitor 16, this capacitor merely shows that a voltage V is supplied to motor inverter 18 via a filtering capacitor 16. The filtering capacitor 16 is used only to filter the signal from the DC power supply 12 in order to remove the peaks and valleys and provide a constant DC current. As such features are well known in the field of electrical engineering and while it may be obvious to use such a feature with a circuit at some point in any DC power supply the Applicant does not believe that this reference is relative in any respect to either the circuit or system disclosed in Amano et al. '608 or the present invention.

The Examiner has cited that claims 14-24 read on cited art Amano et al. '608 in combination with Hanyuda et al. '448. Although the official action does not explain how the references are combinable to form an obviousness rejection nor where the claimed elements are obviated by the combination, these claims are dependent upon the independent claims now believed to be allowable. As the previous claims 14-24 are now rewritten as new claims 26-36 and 38-48, and dependent either directly or indirectly upon the independent claims 25 and 37 which are believed allowable in view of the

12/21/05 4:18 PM

- 7 -

10/731,057

above remarks and amendments, these dependent claims are thus also believed to be allowable and no further discussion is thus provided.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised obviousness rejections should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Amano et al. '608, or Carlson et al. '820 reference, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised obviousness rejections should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

12/21/05 4:18 PM

- 8 -

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10/731,057

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Respectfully submitted,



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12/21/05 - 4:15 PM